STATE OF MINNESOTA

OFFICE OF THE ATTORNEY GENERAL

ADDRESS REPLY TO:
OFFICE OF THE ATTORNEY GENERAL
MINNESOTA POLLUTION CONTROL AGENCY
1935 W. COUNTY ROAD B2
ROSEVILLE, MINNESOTA 55113
(612) 296-7342

November 26, 1980

Bob Leininger, Esquire
Enforcement
EPA - Region V
230 S. Dearborn St.
Chicago, Illinois 60604

Re: Reilly Tar and Chemical

Dear Bob:

Enclosed are pages 20 through 26 of the Briefing Memo which I sent to you on October 21, 1980.

Please provide me with your comments and suggestions.

Very truly yours,

DENNIS M. COYNE
Special Assistant
Attorney General

DMC/ps
Enc.
cc: Melanie Toepfer (wo/enc.)

006960

FIRES, EXPLOSIONS, SPILLS, ETC.

Date of Document	Date of Event	Type of Event	Material Lost	Amount Lost	Where?	Cleanup?
6/30/38	?	Explosion & Fire-Stills 1/4	Tar?	?	Refinery	?
1/4/44	12/27/43	Fire-Kettle	Fuel-Pitch	?	Refinery	?
10/7/58	continuous	Leaks in Steam lines	Steam	?	Storage tank & Unloading areas	----
4/17/63	4/15/63	Explosion	Pitch	a lot	Pitch Blend Tank	Planned
12/24/64	12/18/64	Fire	?	?	Refinery	Inside
6/2/65	6/1/65	Fire	?	?	Tank #20	?
9/21/66	9/14/66	Fire	?	?	Tank #20	?
7/13/67	10/3/66	Explosion	Tar	0	Tank #20	NA
10/26/66	10/13/66	Fire	--	?	Tank #19	?
2/1/67	1/25/67	overflow Fire	Tar	Little	Still #16	-----
5/2/67	4/25/67	Explosion-Fire	Tar	9300 gal	Still #11 Refinery-outside	?
8/22/67	8/12/67	Fire	Tar	0	Stills #13, 14, & 15	NA
3/21/68	?	Boilover	Pitch	?	Still #14	?
4/11/68	3/29/68	Overflow	Tar	?	Still #15	?
2/17/69	?	Leak	Tar	600 gal.	Still #13	Yes
5/7/69	5/1/69	Fire	?	?	Still #16	?
5/27/69	5/24/69	Fire	----	0	Still #16	NA
10/3/69	9/15/69	Rupture	?	?	Still #16	?
1/27/71	1/27/71	Fire	?	Slight	Still #15	?
5/21/71	?	Fire	----	0	Tank #20	NA

One other area of interest is the replacement and repair of equipment at the refinery, specifically the stills. From various documents, the history of the refinery in this regard may be pieced together. While repairs to the stills were quite common (such as replacing insulation damaged due to saturation with spilled tar), replacements or installing new still bottoms were significant events. These events were basically necessitated by the weakening or cracking of still bottoms due to age. In other words, the stills were run until the bottoms wore out.

The original refinery apparently contained two batteries each containing four stills. In 1929 a third battery of four stills was added. A fourth battery followed in 1936. A single still was also added about this time. The stills were numbered one through 17 in the order just presented.

Stills #1-4 were replaced in 1939. #5-7 were replaced in 1941. A new bottom was installed on #17 in 1943. #15 and 16 were replaced in 1944 and #13 and 14 were replaced in 1946. New bottoms were installed on #5-8 in 1945. New bottoms were installed on #9-12 in 1947. #1-4 probably were not used past 1945. As of 1954 #1-8 were no longer used. #11 and 12 were replaced in 1956 and #9 and 10 were replaced in 1958. New bottoms were installed on #13-16 in 1958. These four stills were replaced with five-tube conversion stills in 1961. These fire-tube stills apparently operated with the hot gases (from

natural gas combustion) passing through tubes inside of the still. These were more efficient than the previous stills which were heated only on the outside of the bottom half of the stills. Apparently these five-tube stills operated for the remainder of the plant's life. As of 1971 they were the only stills left at the plant.

e) Wastewater Sources

The main source of wastewater from the refinery was the wet cut which was previously defined. This wastewater stream was contaminated with many of the more volatile components of the coal tar. During the late 1950's the refinery weekly reports quantified the wet cut for the first time. It appears, from these reports, that about 5 per cent of the coal tar refined was collected as wet cut and disposed of. If this percentage was typical over the plant's life, this wastewater source varied from 2000 gallons per week (in the early 1930's and late 1930's) to 6500 gallons per week (in the mid 1940's and in the 1960's). The average flow over the plant's life was about 4500 gallons per week of wet cut.

Other apparent wastewater sources included condenser cooling water, boiler water blowdown, still cleaning water, coke quench water, water from stored raw materials, laboratory wastes, and sanitary wastewater. Contaminated surface runoff from storage tank areas and the piping trenches might also have entered the plant's wastewater system.

The condenser water and boiler blowdown were essentially uncontaminated streams. However, if steam coils were leaky or if the condenser were leaky, these streams could have become slightly contaminated with tar or other materials. Also, the source of the plant's raw water was the open pond previously described which was said to be somewhat contaminated. The boiler blowdown and condenser water could be reused; however,

the amount of pollutants discharged to the wastewater system would not be significantly affected if they were or not. From the information we have, it is unclear how the stills were cleaned and if wastewater was generated.

Coke quench water was used in the stills to cool the coke rapidly so that it could be removed from the stills. This operation used up to 300 gallons of water per still which was discharged to the wastewater system. This could have contributed up to 6000 gallons of wastewater per week in the 1930's and until about 1945. For the next ten years this figure might have been about 2000 gallons per week. After 1955 coking was typically done at the refinery.

If water was in the raw tar shipped to the plant it may have separated in the storage facilities. Common practice at coal tar refineries was to drain water off the tar if it did separate noticeably. This source of wastewater may not have existed at St. Louis Park but if it did it would be expected to be contaminated with many tar components.

Other wastewater sources were laboratory wastes and sanitary wastes. These streams apparently went to the wastewater system as we know that sanitary sewer was not available at the plant site. (Several documents of the late 1960's and early 1970's discuss the possibility of having sanitary sewer installed to service the plant.) These streams are relatively small and insignificant.

To summarize, contaminated wastewater probably amounted to 6500 to 10,000 gallons per week from the refinery. Other small flows or relatively uncontaminated flows might push the figures slightly higher.

CREOSOTING PLANT

a) Raw Materials and Production

The raw materials used in wood treating are the wood and the treating material. At the St. Louis Park plant the wood used was a combination of hardwood and soft wood species. The major products of the plant were treated cross and switch ties for the railroads. However, Wheeler Bridge Company was also a significant customer. We have weekly reports of treating operations between 1935 and 1957. We do know that the treating plant did operate until the refinery closed from refinery reports. The treating plant reports after 1942 do not ~~indicate that~~ tell the customers but we do know that the railroads were customers for the life of the plant. Also, Wheeler Bridge was operating in the 1960's; therefore, we can assume that it was also a customer until the plant closed.

The major treating material used at the plant was creosote oil. The use of creosote oil as a wood preservative was first shown to be effective in the 1830's and still in 1977 was used almost exclusively for the treatment of railroad ties and bridge timbers. (Ref. 7, p. 21) The creosote oil imparts a dark oilly appearance to treated wood and the surface is not suitable for painting. Therefore other "cleaner" types